Forest Insect & Disease Management

AN AERIAL DETECTION SURVEY
OF
JACK PINE BUDWORM DAMAGE
ON THE
HURON MANISTEE NATIONAL FOREST - 1981

by

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INTRODUCTION

Detection reports received from the Mio and Tawas Ranger Districts of the Huron National Forest indicated widespread damage was being caused by the jack pine budworm, Choristoneura pinus Freeman. Discussions with Forest personnel suggested there may also be scattered budworm activity on the Manistee National Forest. In response to these reports, Pete Rush and Steve Munson of the Forest Pest Management group conducted an aerial detection survey for the jack pine budworm on these Forests on July 15 and 16, 1981. We were assisted by Lee Fox of the Mio District, Dave Record of the Harrisville District and Dan Moriarty of the Tawas District.

OBJECTIVES

The objective of this survey was to determine the extent and intensity of the jack pine budworm defoliation on the Huron-Manistee National Forest.

METHODS

An aerial sketchmap survey was performed to define areas and determine levels of defoliation. Class A, half-inch to the mile, Forest Service maps were used. North-south flight lines were flown at three mile intervals in a contract Cessna 182 at an altitude of 1500 feet above ground level and at an airspeed of 90 miles per hour. Observers plotted defoliation for 1.5 miles on each side of the aircraft to obtain 100 percent survey coverage. Jack pine defoliation levels were defined as:

Light defoliation - green with some tannish-pink coloration

Moderate defoliation - orange to orange-brown coloration

Heavy defoliation - dark reddish-brown coloration

RESULTS

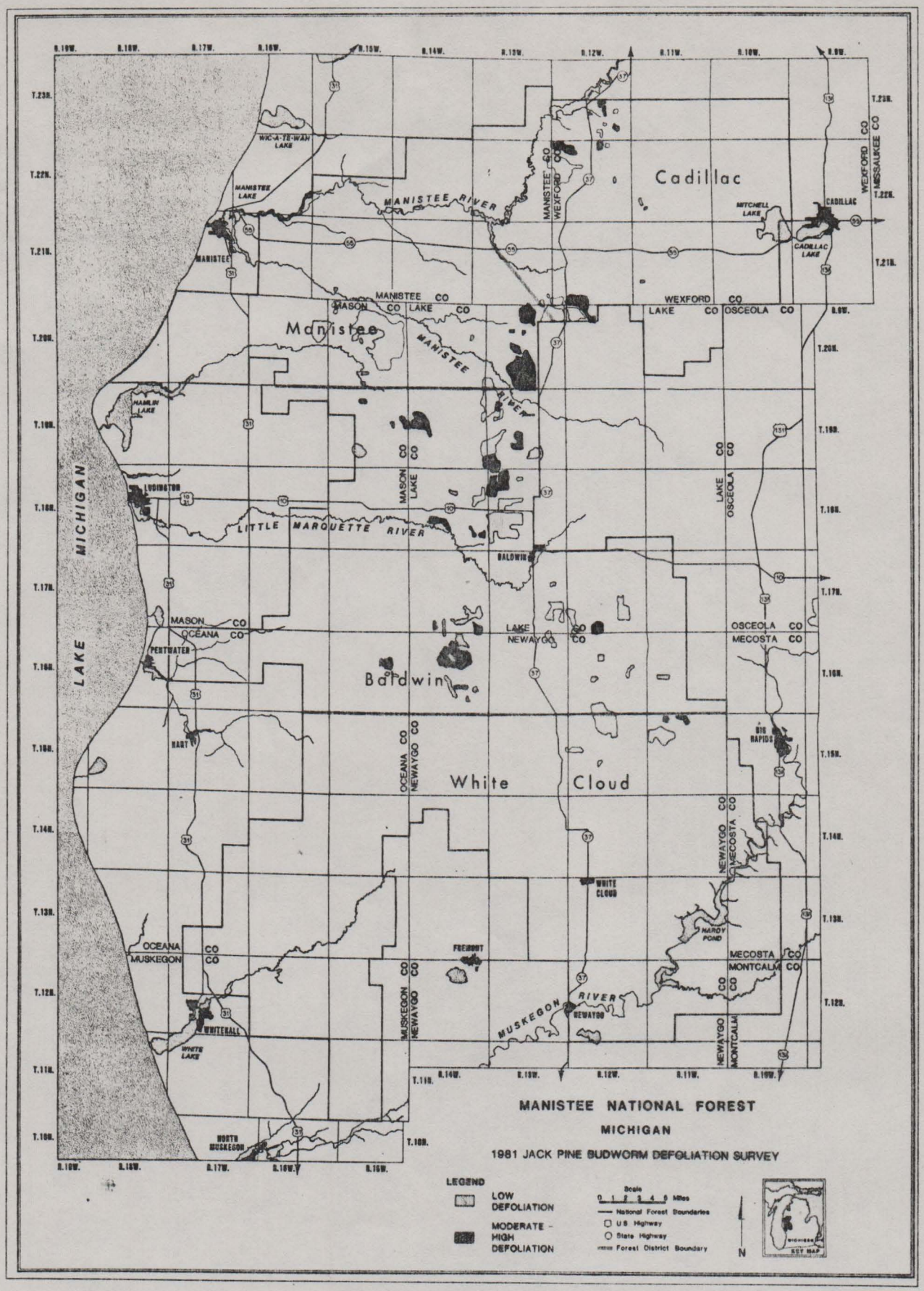
The jack pine budworm is at outbreak levels on both Forests. Over 40,000 acres are infested on the Manistee National Forest (Figure 1) while over three times that area is affected on the Huron National Forest (Figure 2). Table 1 summarizes the extent and intensity of the defoliation detected on both Forests.

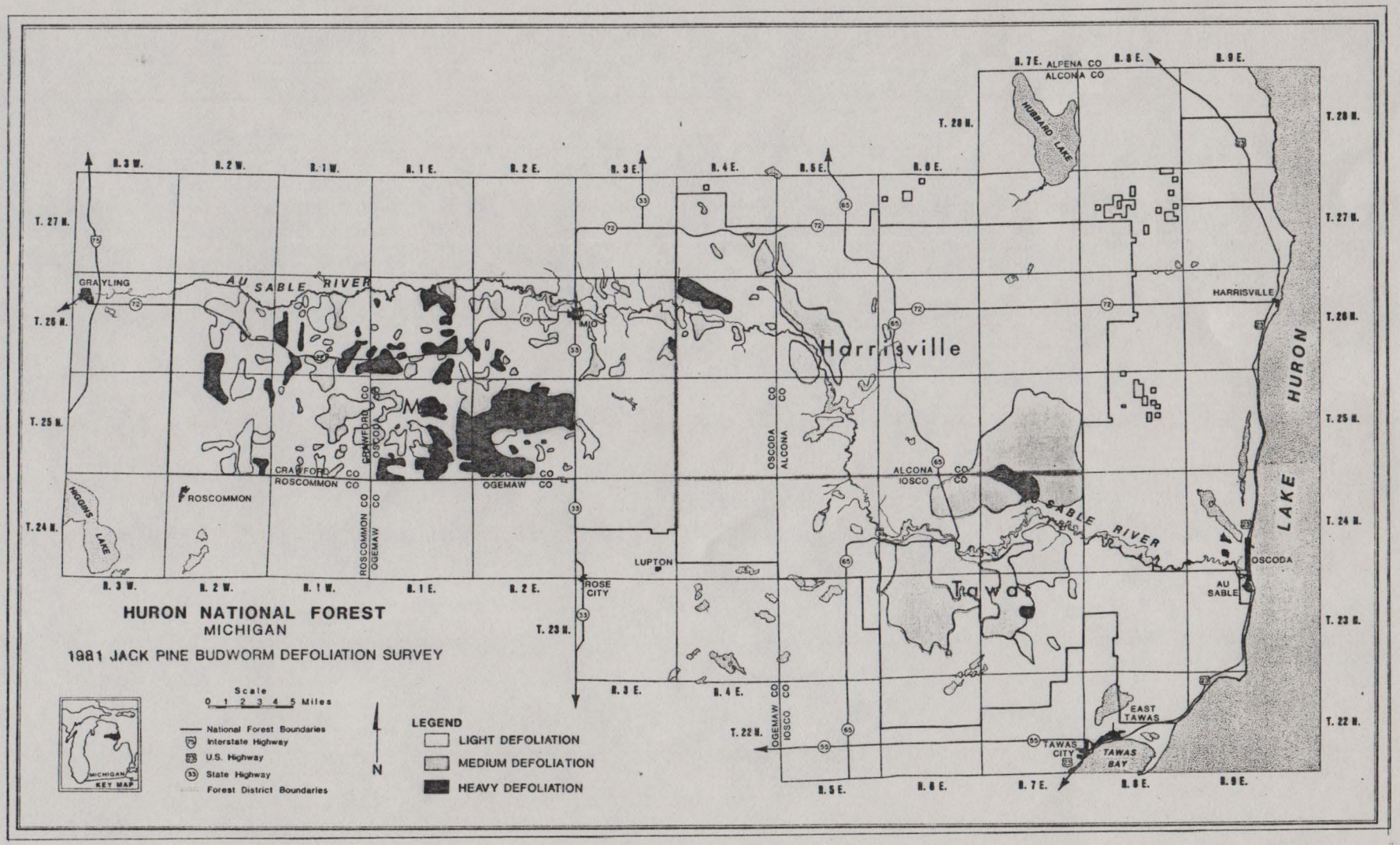
Because of the widespread serious defoliation, an evaluation will be performed by Forest Pest Management personnel during November, 1981. A ground survey will be made to identify the highest risk stands, and to identify management alternatives.

Table 1.--Distribution and intensity of jack pine budworm defoliation on the Huron-Manistee National Forest, 1981.

Location and extent of damage	Federal Acres	Private Acres	Total Acres
Huron National Forest			
Light defoliation	24,934	3,993	28,927
Moderate defoliation	67,481	10,188	77,669
Heavy defoliation	28,697	4,249	32,946
Total	121,112	18,430	139,542
Manistee National Forest			
Light defoliation	21,017	5,708	26,725
Moderate/heavy defoliation	11,980	2,892	14,872
Total	32,997	8,600	41,597
Grand total both Forests	154,109	27,030	181,139

Land ownership classifications are based on the Forest Service "A" map green/white color code.


Cadillac
Manistee
Baldwin
White Cloud
LAKE MICHIGAN
MANISTEE RIVER
LITTLE MARQUETTE RIVER
MUSKEGON RIVER
MANISTEE NATIONAL FOREST
MICHIGAN
1981 JACK PINE BUDWORM DEFOLIATION SURVEY
LEGEND
LOW DEFOLIATION
MODERATE - HIGH DEFOLIATION
Scale
Miles
National Forest Boundaries
US Highway
State Highway
Forest District Boundary
N


HURON NATIONAL FOREST
MICHIGAN
1981 JACK PINE BUDWORM DEFOLIATION SURVEY
Scale
0 1 2 3 4 5 Miles
National Forest Boundaries
Interstate Highway
U.S. Highway
State Highway
Forest District Boundaries
MICHIGAN
KEY MAP
N
LEGEND
LIGHT DEFOLIATION
MEDIUM DEFOLIATION
HEAVY DEFOLIATION
GRAYLING
AU SABLE RIVER
ROSCOMMON
HIGGINS LAKE
LUPTON
ROSE CITY
MIO
HARRISVILLE
OSCODA
AU SABLE
EAST TAWAS
TAWAS CITY
TAWAS BAY
HURON LAKE
ALPENA CO
ALCONA CO
CRAWFORD CO
ROSCOMMON CO
OGEMAW CO
OSCODA CO
IOSCO CO
T. 28 N.
T. 27 N.
T. 26 N.
T. 25 N.
T. 24 N.
T. 23 N.
T. 22 N.
R. 3 W.
R. 2 W.
R. 1 W.
R. 1 E.
R. 2 E.
R. 3 E.
R. 4 E.
R. 5 E.
R. 6 E.
R. 7 E.
R. 8 E.
R. 9 E.